



# National Soil Information System

*a brief technical note explaining one aspect of the National Soil Information System*

## NASIS Communications

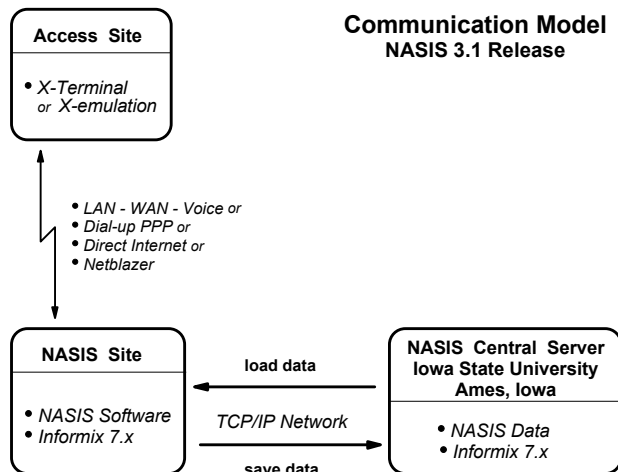
### What is NASIS communications?

NASIS communications is a general term that refers to all aspects of the software design, telecommunications, and network connectivity required to run NASIS at any location.

### How does NASIS communications work?

With the introduction of NASIS 3.1, all soil survey map unit data are stored on the **NASIS Central Server** located at Iowa State University (Fig. 1). **NASIS Sites** retrieve data from the Central Server for editing or reporting and return edited data to the Central Server. **Access Sites** can connect to a NASIS Site and run NASIS remotely, displaying the results locally.

**Figure 1**



### Why is NASIS designed this way?

One of the requirements for a National Soil Information System is that everyone have immediate access to nationally complete and up-to-date soils data at any time, from any location, and guarantee the integrity and security of those data. The NASIS communication design satisfies this requirement.

### What is the NASIS Central Server?

The NASIS Central Server is a computer that stores all the soil survey map unit data in an Informix database and makes it available to NASIS Sites. The soils data in the Central Server are the “permanent” or “original” data. Iowa State University maintains the Central Server and makes regular backups of soil survey data.

### What is a NASIS Site?

A NASIS Site is a computer that is running NASIS software and Informix 7.x database and is connected to the NASIS Central Server via a TCP/IP network. Typically, a NASIS Site is an HP9000 or SUN computer running NASIS 3.1, Informix 7.x, and the HP-UX 10.1 or Solaris 2.5 operating systems.

## What is an Access Site?

An Access Site is any computer not running NASIS software that can connect to a NASIS Site. Typically, an Access Site is an MS-DOS computer running Windows and X-emulation software (Hummingbird Exceed for Windows) at soil survey project offices or field offices. Access Sites may connect to NASIS Sites by several means, including LAN-WAN-Voice or PPP dial-up using modems. However, a direct internet connection is preferred where ever possible.

## How are soil data created and edited?

Soil data are created and edited at a NASIS Site and saved on the NASIS Central Server. When a soil scientist loads data for a soil survey area into NASIS, data are retrieved from the Central Server and placed in edit tables at the NASIS Site. All creation, editing, validation, and reporting occurs at the NASIS Site. Changes to the data are posted to the Central Server when a soil scientist “saves” the data. Permanent data are not stored at a NASIS Site.

## How can soil survey project offices run NASIS?

Typically, soil survey project offices are Access Sites that connect to a NASIS Site and run NASIS remotely. One scenario is a soil survey project office with an MS-DOS computer running Hummingbird Exceed for Windows connecting to an MLRA office using a Netblazer. Although NASIS is actually running remotely at the MLRA office, the NASIS screens are displayed locally at the soil survey project office. Soil survey project offices could also be a NASIS Site if they have the hardware, software, network, and administration resources needed to be a NASIS Site.

## Why is an HP9000 recommended for NASIS Sites?

Although data are stored on the Central Server, all processing functions (calculation, editing, validation, reporting) are performed at the NASIS Site. These tasks require powerful computing capability. The HP9000 is well suited to these tasks.

## Glossary

*LAN* Acronym for local area network. A network connection between computers within the same building.

*PPP* Acronym for Point-to-Point Protocol. An industry standard set of rules for transmitting Internet Protocol packets (data) over telephone lines.

*TCP/IP* Acronym for Transmission Control Protocol/Internet Protocol. An industry standard set of rules required for computers to connect with each other over the internet.

*WAN* Acronym for wide area network. A network connection between distant computers.

## For More Information

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See also:

<http://www.itc.nrcs.usda.gov/nasis/index.html>